

DETAILED ACTION

Response to Amendment

1. Amendment to the claims dated 2/02/2010 has been entered. Claims 1, 8-9, and 13 have been amended. Claims 14-19 have been added.

Response to Arguments

2. Applicant's arguments with respect to the rejection(s) of claim(s) 9 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Jonen et al. (US 5,860,883) and Meco et al. (US 2002/0015825 A1).
3. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Meco et al. (US 2002/0015825 A1).

As per claim 13, Meco et al. discloses a resistant layer (8) adapted to be adhered to and directly contact the teeth of a toothed belt (1) via spreading (the resistant layer 8 is capable of being used in a situation wherein it is adhered to and directly contacting

the teeth of the belt as well as applied by means of spreading, it is noted that these limitations are functional limitations and that the disclosed invention need only be capable of such a use and need not explicitly disclose those uses) and comprising a fluorinated plastomer and an elastomeric material ([0028]); wherein said fluorinated plastomer is in an amount by weight of between 101 and 150 parts by weight with respect to said elastomeric material ([0031]).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 1, 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (2004/0014544 A1) in view of Meco et al. (US 2002/0015825 A1).

As per claims 1-4 and 17, Ito et al. discloses a toothed belt (40, 100), comprising a body (42, 102) and a plurality of teeth (50, 110);

Said teeth being coated with a fabric (62, 122);

Said fabric being treated with a liquid solution of RFL ([0075] Ln. 6-7) and successively coated on the outside with a resistant layer ([0075] Ln. 8-9); said resistant layer directly contacting and adhering to said fabric without an intervening adhesive layer between the resistant layer and the fabric ([0076]-[0087], no adhesives are used, heating and pressure are used to combine the layers together).

Ito et al. is silent as to the composition of the resistant layer coating the fabric, and therefore fails to explicitly disclose the resistant layer comprising a fluorinated plastomer and elastomeric material.

Meco et al. discloses a toothed belt (1) having a plurality of teeth (4) coated with a fabric (5) treated with a liquid solution of RFL ([0027]) and successively coated with a resistant layer (8) wherein said resistant layer comprises a fluorinated plastomer and an elastomeric material ([0028]); wherein said fluorinated plastomer is in an amount by weight of between 101 and 150 parts by weight with respect to said elastomeric material ([0031]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Ito et al. to include the resistant layer comprising fluorinated plastomer and an elastic material, as taught by Meco et al., for the purpose of selecting an appropriate material for providing required abrasion resistance and friction.

As per claim 2, Meco et al. further discloses the fluorinated plastomer is polytetrafluoroethylene ([0033]).

As per claim 3, Meco et al. further discloses the elastomeric material comprises HNBR ([0033]).

As per claim 4, Meco et al. further discloses the elastomeric material comprises HNBR modified with a zinc salt of polymethacrylic acid ([0033]).

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (2004/0014544 A1) in view of Meco et al. (US 2002/0015825 A1) and further in view of Di Meco et al. (EP 1,157,813).

Modified Ito et al. fails to explicitly disclose said resistant layer having a weight of between 50 and 80 grams per meter square.

Di Meco et al. teach a toothed belt having the concept of resistant layer having a weight of between 50 and 80 grams per meter square (see Table 1; mean density of 350-400 g/l with the specified thickness corresponds to weight of 80 grams per meter square which falls in the claimed range).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Modified Ito et al. to include the resistant layer weight taught by Di Meco et al. in order to provide optimal strength, weight and wear characteristics to the belt.

10. Claims 14, 18 and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (2004/0014544 A1) in view of Meco et al. (US 2002/0015825 A1).

As per claims 14 and 18, Modified Ito et al. fails to explicitly disclose the fluorinated plastomer is formed for more than 50% by particles of average size smaller than 10 micrometers.

Osako et al. discloses a power transmission belt and method of manufacturing the power transmission belt with the concept of having fluorinated plastomer is formed by particles of average size smaller than 10 micrometers ([0062]-[0063]).

It would have been obvious to one of ordinary skill in the art at the time the invention to modify the resistant layer of Modified Ito et al. to include plastomer particle configuration taught by Osako et al. in order to improve dispersion of the materials, thereby ensuring a consistent product and performance ([0063]).

As per claim 19, Meco et al. further discloses fluorinated plastomer is in an amount by weight of between 101 and 150 parts by weight with respect to said elastomeric material ([0031]).

11. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jonen et al. (US 5,860,883) in view of Meco et al. (US 2002/0015825 A1).

As per claims 8-9 and 12, Jonen et al. discloses a process for fabricating a toothed belt (30) comprising:

forming an elongate belt body (31) of an elastomeric material (Col. 10, Ln. 50-52), the belt having a first planar side and a second side opposite the first side (Fig. 3);

forming teeth (46) along the second side (Fig. 3, Col. 10, Ln. 58-60);

coating the teeth with a fabric (52, Col. 10, Ln. 64-67, Fig. 3);

treating the fabric with a liquid solution of RFL to impregnate fibers of the fabric (Col. 13, Ln. 9-15, Ln. 28-30);

coating the treated fabric with a resistant layer (Col. 13, Ln. 30-33);

directly contacting and adhering the resistant layer to the fabric coated over the teeth (Col. 13, Ln. 28-33, layers are adhered together through end process of vulcanization).

wherein the resistant layer is applied directly to the fabric via spreading (Col. 13, Ln. 31-33).

Jonen et al. fails to explicitly disclose providing the treated fabric with a resistant layer comprising a fluorinated plastomer.

Meco et al. discloses a toothed belt (1) having a plurality of teeth (4) coated with a fabric (5) treated with a liquid solution of RFL ([0027]) and successively coated with a resistant layer (8) wherein said resistant layer comprises a fluorinated plastomer and an elastomeric material ([0028]); wherein said fluorinated plastomer is in an amount by weight of between 101 and 150 parts by weight with respect to said elastomeric material ([0031]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Ito et al. to include the resistant layer comprising fluorinated plastomer and an elastic material, as taught by Jonen et al., for the purpose of selecting an appropriate material for providing required abrasion resistance and friction.

As per claim 10, Jonen et al. discloses the body includes embedding a plurality of longitudinal filiform resistant inserts or cords (38) in the elastomeric material (Col. 10, Ln. 50-55, Fig. 3).

As per claim 11, Meco et al. further discloses the elastomeric material comprises HNBR ([0033]).

As per claim 13, Jonen discloses a resistant layer adapted to be adhered to and directly contact the teeth of a toothed belt via spreading (Col. 13, Ln. 28-33).

Jonen et al. fails to explicitly disclose providing the treated fabric with a resistant layer comprising a fluorinated plastomer.

Meco et al. discloses a toothed belt (1) having a plurality of teeth (4) coated with a fabric (5) treated with a liquid solution of RFL ([0027]) and successively coated with a resistant layer (8) wherein said resistant layer comprises a fluorinated plastomer and an elastomeric material ([0028]); wherein said fluorinated plastomer is in an amount by weight of between 101 and 150 parts by weight with respect to said elastomeric material ([0031]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of Ito et al. to include the resistant layer comprising fluorinated plastomer and an elastic material, as taught by Jonen et al., for the purpose of selecting an appropriate material for providing required abrasion resistance and friction.

12. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito Jonen et al. (US 5,860,883) in view of Meco et al. (US 2002/0015825 A1).

As per claims 15-16, Modified Jonen et al. fails to explicitly disclose the fluorinated plastomer is formed for more than 50% by particles of average size smaller than 10 micrometers.

Osako et al. discloses a power transmission belt and method of manufacturing the power transmission belt with the concept of having fluorinated plastomer is formed by particles of average size smaller than 10 micrometers ([0062]-[0063]).

It would have been obvious to one of ordinary skill in the art at the time the invention to modify the resistant layer of Modified Jonen et al. to include plastomer particle configuration taught by Osako et al. in order to improve dispersion of the materials, thereby ensuring a consistent product and performance ([0063]).

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNA MOMPER whose telephone number is (571)270-5788. The examiner can normally be reached on M-F 6:00-3:30 (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

am

/Robert A. Siconolfi/
Supervisory Patent Examiner, Art
Unit 3657